

apprehend small grounds for fear of local extinction of any species named below, at least for some time to come:

Wilson, 1811. At Gray's Ferry only	No.	Present at both Gray's Ferry and Berwyn.	No.	Burns, 1907. At Berwyn only.
.....		.....	2	Yellow-billed Cuckoo.
.....		.....	2	Northern Flicker.
.....	4	Chimney Swift.....	4	Crested Flycatcher.
Phoebe.....	2	.....	2	
.....		Wood Pewee.....	2	Sometimes present.
Orchard Oriole.....	6	.....	
Baltimore Oriole.....	6	Purple Grackle.....	5	
.....		.....	2	American Crow.
.....		.....	2	American Goldfinch.
Swamp Sparrow.....	16	Chipping Sparrow.....	4	
.....	2	.....	
.....	2	Indigo Bunting.....	2	Towhee.
.....		.....	2	
.....	?	Scarlet Tanager.....	2	Sometimes present.
Purple Martin.....	2	.....	
Barn Swallow.....	20	.....	
.....		.....	2	Cedar Waxwing.
.....		.....	4	Red-eyed Vireo.
Warbling Vireo.....	4	.....		Sometimes present.
.....	2	White-eyed Vireo.....	?	
Yellow Warbler.....	6	.....	
.....		.....	4	Oven-bird.
.....		.....	2	Kentucky Warbler.
.....	2	Yellow-breasted Chat.....	2	
.....	10	Catbird.....	10	Brown Thrasher.
.....		.....	2	
.....	10	House Wren.....	2	Wood Thrush.
.....		.....	4	
.....	2	American Robin.....	12	English Sparrow.
.....		.....	10	
19 species.....	114	Individuals.....	95	25 species.

ASPECTS OF THE SPRING MIGRATION OF 1907.

BY LYNDIS JONES.

The spring migrations of the past season have so far receded that it is possible to view them in proper perspective. The migration phenomena were so surprising in many of their aspects that one became almost bewildered in his effort to properly follow the changes and exceptional features.

If anyone ever inclined to a doubt of the profound effect which weather has upon the movements of the birds such doubt must have been effectually dispelled long before the close of the last vernal migration season. Here in northern Ohio there was nothing unusual in either weather conditions

or bird movements until March 21st, although a considerable flight of ducks, blackbirds, and the earlier sparrows occurred on March 17th and 18th. On the 21st the temperature reached 63°, and on the following day 78°, with summer temperatures prevailing and no frosts at night until April 5th. It was during this period that reports reached me from Sandusky, through Prof. E. L. Moseley, that not only swallows but Chimney Swifts, Nighthawks, and Ruby-throated Hummingbirds were seen there on more than one occasion. I am bound to state, however, that none of these birds were seen by him, but the reports came from what seem to be reliable sources. During this period twenty-five species arrived in Oberlin, none of them being very exceptional. Following this two weeks of summer the temperature dropped and remained low enough for frosts on many nights, with occasional and short periods of seasonable temperatures, until May 11th. During this cold period the sky was usually lowering, especially so at night, and rain or snow was frequent. The only movement of any consequence that occurred during this period was on April 29th, following a warm day and clear night, when thirty species arrived, and with them a marked increase in the numbers of many other species which had straggled in despite the unfavorable weather. Low temperatures and heavy weather followed immediately. May 11th the temperature began to rise and the sky clear and conditions for a large movement improved on the 12th. Along the south shore of Lake Erie the 13th was not only the banner day for the year but it proved to be a record breaker in every particular. Not only were the species recorded more numerous than on any previous day in the experience of the writer, but most of the species were represented by unusual numbers of individuals.

One of the exceptional features of the flight of April 29th was the great flight of hawks during the early part of the day. The Sharp-shinned and Broad-winged were present in uncountable numbers, and mixed with them or hawking over the marshes we recorded Marsh, Pigeon, Red-shouldered American Sparrow, American Rough-legged, and one other whose identification could not be certainly determined. The

Sharp-shins were generally found among the shrubbery while the Broad-wings were soaring about overhead or passing slowly eastward.

Continued adverse weather conditions to the end of May resulted in June records for many of the warblers which are usually upon their nesting grounds north of Ohio by May 25th. Indeed, there was scarcely any diminution in the numbers of many of the transient warblers up to May 28th, when the writer's work was concluded.

In view of the extensive area covered by the exceptional weather conditions and consequent exceptional migrations of the birds, it seems to the writer worth while to present in tabular form three "All Day" records made during the last great movement of the birds. Two of these are from Ohio, but since one represents the lake shore fauna and the other the strictly inland fauna they should be considered supplementary. The third record was made at Princeton, New Jersey, in the line of northward movement for the birds belonging to the Atlantic Plain fauna. Rev. W. F. Henninger contributes the record from Tiffin, Ohio; Mr. Charles H. Rogers the record from Princeton, New Jersey; and the writer, with the assistance of two friends, the record from the south shore of Lake Erie, particularly from the sand spit reaching out into the lake to Cedar Point opposite Sandusky, Ohio. The last named record was made on May 13th, the others on May 14th, 1907:

	Oberlin, O.	Tiffin, O.	Princeton, N. J.
Pied-billed Grebe	3	1?	
Herring Gull	20		
Bonaparte's Gull	10		
Common Tern	C		
Black Tern	10		
Double-crested Cormorant	1		
Red-breasted Merganser	7		
Black Duck	20		
Blue-winged Teal	3		
Lesser Scaup Duck	C		
Bufflehead	1		
Ruddy Duck	50		
American Bittern	20		
Least Bittern	1		
Great Blue Heron	5	1	1

	Oberlin, O.	Tiffin, O.	Princeton, N. J.
Green Heron	5	C	4
Black-crowned Night Heron		1	1
King Rail •	1		
Virginia Rail	C		
Sora	C	1	
Florida Gallinule	C		
American Coot	C		
American Woodcock	10		
Greater Yellow-legs		1	
Yellow-legs	2	2	
Solitary Sandpiper	1	2	5
Bartramian Sandpiper	2	4	
Spotted Sandpiper	C	C	47
Killdeer	2	C	2
Semipalmated Plover	2		
Piping Plover	2		
Bob-white		5	
Mourning Dove	C	C	7
Turkey Vulture		1	1
Marsh Hawk	3		1?
Sharp-shinned Hawk	C	1	
Red-shouldered Hawk	1	1	
Bald Eagle	2		
American Sparrow Hawk	10	2	3
Cooper's Hawk		2	
Belted Kingfisher	10	3	4
Yellow-billed Cuckoo	10	2	
Black-billed Cuckoo	10	1	
Hairy Woodpecker		2	1
Downy Woodpecker	3	3	13
Red-headed Woodpecker	C	C	
Northern Flicker	C	C	21
Whippoorwill	C		
Nighthawk	2	1	
Chimney Swift	C	C	82
Ruby-throated Hummingbird	1	1	1
Kingbird	C	C	48
Crested Flycatcher	C	2	2
Phebe	few	C	7
Olive-sided Flycatcher	30		
Wood Pewee	C	C	
Yellow-bellied Flycatcher	20		
Green-crested Flycatcher	C	C	
Alder Flycatcher	C	4	
Least Flycatcher	C	2	1
Prairie Horned Lark	1	2	
Blue Jay	110	C	5
American Crow	C	C	44
Fish Crow			1
Starling			2
Bobolink	C	C	22
Cowbird	C	C	5
Red-winged Blackbird	C	C	48
Meadowlark	C	C	34
Orchard Oriole	2	1	5

	Oberlin, O.	Tiffin, O.	Princeton, N. J.
Baltimore Oriole	C	C	5
Rusty Blackbird	20		17
Purple Grackle			72
Bronzed Grackle	C	C	
Purple Finch	2		21
American Goldfinch	C	C	44
Pine Siskin	100		
Vesper Sparrow	C	C	6
Savanna Sparrow			1
Grasshopper Sparrow	C	C	12
Henslow's Sparrow	3		6
White-crowned Sparrow	C		
White-throated Sparrow	C	1	29
Chipping Sparrow	C	C	28
Field Sparrow	C	C	24
Slate-colored Junco	1		
Song Sparrow	C	C	133
Lincoln's Sparrow	10		
Swamp Sparrow	3	1	19
Towhee	C	C	31
Cardinal	10	C	4
Rose-breasted Grosbeak	C	C	3
Indigo Bunting	C	C	
Dickcissel		2	
Scarlet Tanager	10	C	2
Purple Martin	20	C	
Cliff Swallow	C		
Barn Swallow	C	C	18
Tree Swallow	C		3
Bank Swallow	C	C	3
Rough-winged Swallow	C	C	7
Cedar Waxwing		2	
Migrant Shrike	1	1	
Red-eyed Vireo	C	C	1
Philadelphia Vireo	C		
Warbling Vireo	10	C	
Yellow-throated Vireo	10	2	7
Blue-headed Vireo	C	C	1
White-eyed Vireo			5
Black and White Warbler	C	2	46
Worm-eating Warbler			6
Blue-winged Warbler		C	3
Golden-winged Warbler		4	
Northern Parula Warbler	1	C	16
Nashville Warbler	C	2	
Orange-crowned Warbler	10		
Tennessee Warbler	C	3	
Brewster's Warbler	1		
Yellow Warbler	C	C	52
Black-throated Blue Warbler	C	2	15
Myrtle Warbler	C	C	81
Magnolia Warbler	C	C	2
Cerulean Warbler		2	
Chestnut-sided Warbler	C	C	8
Bay-breasted Warbler	C	6	

	Oberlin, O.	Tiffin, O.	Princeton, N. J.
Black-poll Warbler	1	7	
Blackburnian Warbler	C	C	
Black-throated Green Warbler	C	C	6
Palm Warbler	10	1	
Yellow Palm Warbler	C		2
Prairie Warbler	C		1
Oven-bird	C	2	33
Water-Thrush	2	1	13
Louisiana Water-Thrush	1		
Kentucky Warbler	2		
Mourning Warbler	1	4	
Northern Yellow-throat	C	C	51
Yellow-breasted Chat	6	2	
Hooded Warbler	1		2
Wilson's Warbler	10	3	
Canadian Warbler	C	C	
American Redstart	C	C	17
American Pitpit	C	7	5
Catbird	C	C	62
Brown Thrasher	C	C	9
House Wren	C	C	3
Winter Wren	4		
Long-billed Marsh Wren	C		
Brown Creeper	10		
White-breasted Nuthatch	1	C	4
Red-breasted Nuthatch	20	2	
Tufted Titmouse	3	C	7
Chickadee	2	4	
Carolina Chickadee			3
Golden-crowned Kinglet		2	
Ruby-crowned Kinglet	10	2	2
Blue-gray Gnatcatcher	20	C	
Wood Thrush	C	2	17
Wilson's Thrush	C	C	28
Olive-backed Thrush	C	3	
Gray-checked Thrush	C	4	
Hermit Thrush	10	2	
American Robin	C	C	146
Bluebird	C	C	10
Species	144	112	84

As a further contribution to the subject under discussion the appended table of comparisons of four localities is in point. I have selected these localities because the lists submitted seem to me to represent about equally careful work and because they contain a considerable number of species common to each, thus affording opportunity for fair comparisons. Bristol, Conn., and Bloomfield, N. J., may be taken as two supplementary localities, and Youngstown and Oberlin, Ohio, as two others of the same sort for the middle west. It is

probable that a much larger number of localities would show a much more erratic movement of many of the birds even in neighboring localities, for my experience about Oberlin indicated that while the host of a species was late in arrival one might find a few venturesome individuals eking out a miserable subsistence in some particularly favorable spot. Failure to find the spot would result in overlooking the vanguard of the species and thus result in an exceptionally late record. Thus at Oberlin the American Redstart was represented by only seven individuals until May 13, when individuals were found everywhere in the woods. The same condition occurred with each of the warblers, recorded in late April and early May. If the arrival of the bulk of a species should be taken as the real arrival of that species then all but the first ten on the subjoined list were two or more weeks late in their arrival at Oberlin.

	Youngst'wn, Ohio.	Oberlin, Ohio.	Bloomfield, N. J.	Bristol, Conn.
American Robin	Feb. 22	Mar. 4	Mar. 16	Mar. 8
Red-winged Blackbird	Mar. 14	Mar. 15	Mar. 24	Mar. 17
Phoebe	Mar. 18	Mar. 18	Mar. 17	Mar. 17
Towhee	Mar. 18	Mar. 18	Apr. 27	Apr. 28
Fox Sparrow	Mar. 18	Mar. 18	Mar. 16	Mar. 17
Hermit Thrush	Mar. 18	Mar. 23	Mar. 23	Apr. 11
Chipping Sparrow	Mar. 23	Mar. 30	Apr. 5	Apr. 21
Vesper Sparrow	Mar. 25	Mar. 22	Apr. 14	Apr. 14
Barn Swallow	Apr. 23	Apr. 22	May 5	Apr. 23
Myrtle Warbler	Apr. 25	Apr. 22	May 10	May 12
Yellow Warbler	Apr. 25	Apr. 29	May 5	May 12
Northern Yellow-throat	Apr. 29	Apr. 29	May 10	May 12
Oven-bird	Apr. 29	Apr. 30	May 15	May 5
Wood Thrush	Apr. 29	Apr. 29	May 6	May 5
Black and White Warbler	Apr. 29	Apr. 29	May 5	Apr. 26
Chimney Swift	Apr. 29	Apr. 29	May 5	May 8
House Wren	Apr. 30	Apr. 29	May 5	May 1
Catbird	Apr. 30	Apr. 29	May 5	May 3
Wilson's Thrush	May 1	Apr. 29	May 25	May 12
American Redstart	May 1	May 1	May 19	May 12
Black-throated Bl. Warb.	May 1	Apr. 29	May 10	May 12
Scarlet Tanager	May 1	May 8	May 27	May 12
Magnolia Warbler	May 6	May 13	May 10	May 16
Least Flycatcher	May 11	May 13	May 5	May 5
Chestnut-sided Warbler	May 11	May 13	May 13	May 12
Red-eyed Vireo	May 12	May 13	May 19	May 14
Canadian Warbler	May 16	May 13	May 26	May 13
Indigo Bunting	May 16	May 13	May 30	May 19
Yellow-throated Vireo	May 16	May 11	May 19	May 9

Of the birds listed above for Oberlin, Ohio, only the Vesper Sparrow

was appreciably earlier than normal, it being more than a week early for the locality. The last eight mentioned species were from a week to two weeks later than the average date of first appearance. While this list includes only a few of the species which make up the Spring movement, it is representative of the species found in each locality and may be taken as indicating the bird movements during the past phenomenal Spring.

BIRDS FROM A CAR WINDOW AGAIN.

BY LYNDS JONES.

In spite of all that has been said and can be said against placing any reliance upon observations from a car window there is a certain value in making as careful records as conditions warrant while one is racing across country in a sleeping-car. No small part of the value to the individual concerned lies in thus lessening the monotony of the journey; as everyone who has attempted this sort of pastime can testify. But there is another value which must not be overlooked, which lies in the comparison of the numbers of individuals of each species which it has been possible to record with certainty. It has been said that any record made from a car window must be taken with a certain degree of mental reservation. I am inclined to challenge that statement and make the contrary assertion that it is entirely possible to be as certain of some birds from a car window as it is from any vantage point. Of course this will be true of a limited number of species whose individual characteristics are very marked, or else they must not be recorded except during the time when the train is standing still and the observer is able to make free use of his field-glasses.

In making the list which follows I have admitted only records which are beyond question in my own mind. This has resulted in the rejection of many records which may have been good but lacked the element of certainty. The list represents much less than half of all of the species actually recorded. Only those are given which seem to be of interest from the standpoint of comparisons. In this list no account is taken